भारतीय मानक
Indian Standard

IS 15183 (Part 3) : 2018

भवनों के रखरखाव की व्यवस्था — मार्गदर्शी सिद्धांत

भाग 3 श्रमिक

(पहला पुनरीक्षण)

Maintenance Management of Buildings — Guidelines

Part 3 Labour

(First Revision)

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Building Construction Practices Sectional Committee, CED 13

FOREWORD

This Indian Standard (Part 3) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Building Construction Practices Sectional Committee had been approved by the Civil Engineering Division Council.

Maintenance management in building industry is the art of preserving over a long period what has been constructed. It is as important as construction management or even more. Whereas construction stage lasts for a short period, say 2 to 5 years, maintenance continues for at least 20 to 30 times the construction phase. Bad practice of maintenance adversely affects the environment in which people live or work, thus affecting the overall output.

Even though the adverse effects of deterioration of a building are known, yet the process of maintenance of the building is given a very low priority and most of the maintenance decisions are taken by the management on the basis of expediency, and in most of the cases are unrelated compromises between the physical needs and availability of finance.

Though the buildings may be designed to be very durable, they need maintenance to keep them in good condition. Everyone concerned with buildings whether as owners, engineers, designers, constructors or users should take a serious interest in building maintenance. In the post-construction stage, the day-to-day maintenance or upkeep of the building shall certainly delay the decay of the building structure.

The Indian Standard IS 15183 was envisaged to address the important aspect of maintenance management of buildings. This standard is published in three parts. The other parts in the series are:

Part 1	General
Part 2	Finance

This standard (Part 3) on labour, was first published in 2002 and was intended to cover the aspects related to labour management concerning building maintenance. This standard keeps in view the practices in the field of building maintenance management in the country.

The first revision of the standard is aimed at bringing the provisions at par with the provisions of the SP 7 (Part 12) : 2016 ‘National building code of India: Part 12 Asset and facility management’. Also, other necessary changes have been incorporated.

In this revision the following major changes have been made:

a) Norms for employment of workmen have been modified specifying the output per person; and
b) Provision related to multidisciplinary training of workmen has been updated.

The composition of the Committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be same as that of the specified value in this standard.

Indian Standard

MAINTENANCE MANAGEMENT OF BUILDINGS — GUIDELINES

PART 3 LABOUR

(First Revision)

1 SCOPE

This standard (Part 3) provides guidance on labour management concerning building maintenance.

NOTE – For detailed provisions on management of building assets and associated facilities; and maintenance of fixed assets and building services facilities, a reference may be made to the SP 7 (Part 12) : 2016 'National building code of India 2016: Part 12 Asset and facility management'. Also, the sustainability aspects related to maintenance given in **13.3** of SP 7 (Part 11), may be referred.

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subjected to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
3861 : 2002	Method of measurement of plinth, carpet and rentable areas of buildings (*second revision*)
15183	Guidelines for maintenance management of buildings
(Part 1) : 2018	General (*first revision*)
(Part 2) : 2018	Finance (*first revision*)
SP 7 : 2016	National building code of India 2016

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

3.1 Building Maintenance — Work undertaken to maintain or restore the performance of the building fabric and its services to provide an efficient, safe and acceptable operating environment to its users.

3.2 Labour Management — Labour management is the part of management activity which is concerned with the economic and appropriate use of labour resources.

3.3 Maintenance — An intervention on an asset to improve its operation or ensure its continued good operation (It is also the combination of all technical and associated administrative actions during the service life to retain a building, or its parts, in a state in which it can perform its required functions).

3.4 Maintenance Management — Process of ensuring that the most effective and efficient maintenance programme is formulated and delivered to ensure that assets/facilities continue to perform their intended function. The organization of maintenance has to be within an agreed policy. Maintenance can be seen as a form of 'steady state' activity.

3.5 Maintenance Policy — Scope and course of action taken to achieve an organization's objectives.

3.6 Maintenance Programme — Arrangement of maintenance tasks in terms of their sequence, durations and resource requirements.

3.7 Plinth — The portion of a structure between the surface of the surrounding ground and surface of the floor, immediately above the ground.

3.8 Plinth Area — The built up covered area measured at the floor level of the basement or of any storey (*see also* IS 3861).

3.9 Service Life — Period of time after installation during which a building or its parts meets or exceed the performance requirements.

4 NORMS FOR LABOUR MANAGEMENT

4.1 Since the types of assets and facilities, requirements and levels of maintenance vary widely from asset to asset, the same may be established between the parties concerned depending on the type of the asset and the complexities involved. Typical indicative norms for employment of workmen for day to day maintenance of buildings are given at **4.2**.

4.2 Multidisciplinary skill among the workers should be encouraged. Multidisciplinary training programmes should be organized for the workmen to impart them knowledge of various skills. After suitable tests, they should be entrusted with multidisciplinary responsibilities. This approach of multidisciplinary skill will help in improving the quality of maintenance and shall also result in speedy attendance of maintenance complaints requiring attention of two/three disciplines at a time.

4.3 The following categories of the workers may be provided with multidisciplinary skills:

4.4 Organizations should ensure that suitable expertise is available for maintenance and its management at all levels within the organization. Where this expertise is not available in an organization, external resources should be employed instead. Persons responsible for managing the maintenance of facilities, including engineering installations, should possess appropriate management ability and technical competence.

Basic Skill	*Additional Qualification Relating to Work*
Plumber	Mason
Plumber	Fitter + Mason
Upholsterer	Carpenter
Wireman	Lift operator/Pump operator
Assistant wireman	Assistant operator
Operator, such as: Concrete mixer operator Concrete vibrator operator Crane operator Crawler dozer operator Dumper operator Hot mix plant operator Hydraulic excavator operator Machine operator Motorized grader operator Road roller operator Stone crusher operator Stone cutter and dresser Tar boiler operator Tower crane erection and operations (concreting operations) Vibratory road roller operator Wheeled loader operator	Fitter Lift operator Mechanic Motor lorry driver Road roller driver
Lift operator	Lift mechanic Pump operator
Road roller driver	Mechanic Mechanic — Auto/Heavy vehicles Mechanic — Earth moving equipment
Motor lorry driver	Road roller driver
Multiskilled Technician (MST) — Electrician	HVAC/Chiller operations
Multiskilled Technician (MST) — HVAC	BMS and DG operations
BMS operator	CCTV operations
Lift technician	Electrician
Fire technician	Electrician

5 LABOUR REQUIREMENT IN DAY-TO-DAY BUILDING MAINTENANCE

5.1 Building maintenance is known to be most labour intensive of the construction industry.

5.2 Civil Works

Maintenance staff is required for day-to-day maintenance of buildings. The work of carrying out annual repairs to buildings, like white/colour washing, distempering, emulsion painting, enamel paint/polish, etc, works of additions and alterations or minor works not requiring immediate execution are normally not covered in their duties and may be got done through contractors. However, spare capacity, if any, should be utilized in carrying out petty items of works.

5.2.1 *Norms for Employment of Workmen*

The general norms for employment of workmen for civil works in building are given in Table 1.

5.3 Electrical Engineering Works

5.3.1 *Day-to-Day Maintenance*

For electrical engineering works, maintenance staff is generally employed on routine maintenance works of internal wiring. Maintenance and repair work of specialized and complicated nature are not covered. The yardsticks given in Table 1 indicate the workmen normally required for day-to-day maintenance of electrical works.

NOTE — For institutional buildings, commercial/business buildings, 24x7 operational coverage deployment norms will depend upon specific requirement.

5.3.2 For electrical installations, only the electrician/wireman/assistant wireman holding valid permit/trade licence issued by the electrical inspectorate/state administration (of the respective state in which work is to be carried out) and having qualification, certification from those of Industrial Training Institutes, National Council for Vocational Training (NCVT), Board of Technical Education shall be deputed on work.

Table 1 General Norms for Employment of Workmen

(*Clauses* 5.2.1 and 5.3.1)

Sl No. (1)	Categories (2)	Number (3)	Residential Buildings (4)	Non- Residential Buildings (5)	Remarks (6)
i) **Civil Categories**[1]:			Plinth area, in m^2, for which admissible		
a)	Mason	1	25 000	30 000	For public buildings, such as airports, hospitals, hotels, norms will depend upon the facilities and specific requirements
b)	Carpenter	1	30 000	50 000	
c)	Plumber	1	30 000	36 000	
d)	Sewerman	1	30 000	60 000	
e)	*Shramik*/*Beldar*		One *beldar* for each carpenter and mason. Additional as per work requirement	Twice the number of workers in category of mason and carpenter	
ii) **Electrical Categories**:			No. of points for which one person is required		
a)	Wireman	1	3 300	3 300	For public buildings, such as airports, hospitals, hotels, norms will depend upon the facilities and specific requirements
b)	*Khallasi*[2]	1	6 600	6 600	

[1] Number of workmen indicated is where engagement is considered desirable on regular basis for entire year. Night duty staff is not included in this norm.

[2] One *khallasi* for two wiremen.

NOTES

1 These norms are for government buildings where change of users is very often and permanent staff is required on account of sensitivity of users.

2 Actual requirements will depend upon type of structure, its usage and complexity/importance and level of maintenance required.

3 Requirement of other category of maintenance and operational staff will depend upon the type and usage of the facility.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Building Construction Practices Sectional Committee, CED 13

Organization	*Representative(s)*
In Personal Capacity (*Flat No. 2061, Engineers Apartments, Plot 11, Sector - 18A, Dwarka, New Delhi* 110078)	Shri D. S. Sachdev (***Chairman***)
Ahluwalia Contracts (India) Limited, New Delhi	Shri Shobhit Uppal Shri Pradeep Kumar (*Alternate*)
Association of Consulting Civil Engineers (India), Bengaluru	Shri A. N. Prakash Shri Satish V. Salpekar (*Alternate*)
Bhabha Atomic Research Centre, Mumbai	Shri K. Srinivas Shri H. E. Iyer (*Alternate*)
Builders Association of India, New Delhi	Shri Surojit Samanta Shri Ram Avtar (*Alternate*)
Building Materials & Technology Promotion Council, New Delhi	Shri Chandi Nath Jha
Central Insecticides Board, Faridabad	Additional PPA cum Secretary (CIB & RC) Joint Director (Entomology) (*Alternate*)
Central Public Works Department, New Delhi	Chief Engineer (CSQ) Superintending Engineer (TAS) (*Alternate*)
Confederation of Construction Products and Services, New Delhi	Shri Deepak Gahlowt Shri Shashi Kant (*Alternate*)
CSIR-Central Building Research Institute, Roorkee	Shri S. K. Negi Dr Ajay Chourasia (*Alternate*)
CSIR-North East Institute of Science and Technology, Jorhat	Representative
CSIR-Structural Engineering Research Centre, Chennai	Director Dr P. Srinivasan (*Alternate*)
Delhi Development Authority, New Delhi	Chief Engineer (SZ) Superintending Engineer (P)-1 (*Alternate*)
Delhi Urban Shelter Improvement Board, New Delhi	Representative
Engineers India Limited, New Delhi	Shri Rajanji Srivastava Shri Ravindra Kumar (*Alternate*)
Forest Research Institute, Dehradun	Dr Kishan Kumar V. S.
Housing & Urban Development Corporation Limited, New Delhi	Representative
Indian Buildings Congress, New Delhi	Shri S. C. Bhatia Shri P. S. Chadha (*Alternate*)
Indian Pest Control Association, New Delhi	Vice President General Secretary (*Alternate*)
Indian Plywood Industries Research & Training Institute, Bengaluru	Shri Amitava Sil Shri Anand Nandanwar (*Alternate*)
Larsen & Toubro Limited, ECC Division, Chennai	Shri Rajan Venkateswaran Shri V. Sukumar Hebbar (*Alternate*)

Organization	*Representative(s)*
Military Engineer Services, Engineer-in-Chief's Branch, Integrated HQ of MoD (Army), New Delhi	Jt DG (Architecture)
NBCC (India) Limited, New Delhi	Executive Director (Engg) General Manager (Engg) (*Alternate*)
NTPC Ltd, New Delhi	Shri R. L. Das Shri Anil Kapoor (*Alternate*)
Pest Control (India) Pvt Ltd, Mumbai	Shri Shankar M. Ghuge Shri Nitin B. Jagtap (*Alternate*)
Public Works Department, Govt of Gujarat, Gujarat	Superintending Engineer, Design (R&D)
Public Works Department, Govt of NCT of Delhi, New Delhi	Representative
Research, Designs and Standards Organization, Ministry of Railways, Lucknow	Director (Works) ADE (Works) (*Alternate*)
School of Planning & Architecture, New Delhi	Prof Anil Dewan Prof Jaya Kumar (*Alternate*)
The All India Glass Manufacturers' Federation, New Delhi	Shri Sourabh Kankar Shri Rupinder Shelly (*Alternate*)
The Energy and Resources Institute, New Delhi	Shri Sanjay Seth Ms Megha Behal (*Alternate*)
The Indian Institute of Architects, Mumbai	Shri Vijay Garg Shri Shamit Manchanda (*Alternate*)
The Institution of Engineers (India), Kolkata	Shri P. K. Adlakha Shri Devendra Gill (*Alternate*)
In personal capacity (*Pratap Nursery Lane Near Gurudwara, Panditwari, Dehradun*)	Shri K. S. Pruthi
BIS Directorate General	Shri Sanjay Pant, Scientist 'F' and Head (Civil Engineering) [Representing Director General (*Ex-officio*)]

Member Secretary

Shri S. Arun Kumar

Scientist 'D' (Civil Engineering), BIS

Bureau of Indian Standards

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